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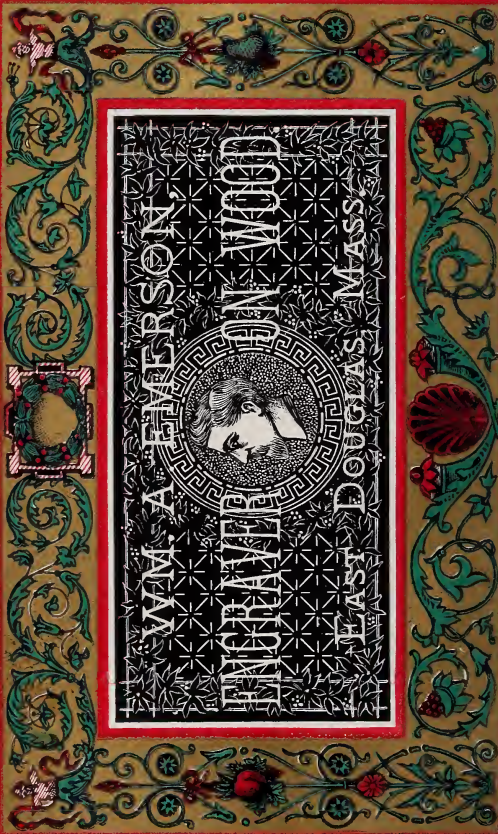
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WM. A. EMERSON.
ENGRAVED ON WOOD
EAST DOUGLAS, MASS.



PRACTICAL INSTRUCTION

IN THE

ART OF WOOD ENGRAVING,

FOR

PERSONS WISHING TO LEARN THE ART WITHOUT AN
INSTRUCTOR. CONTAINING A DESCRIPTION OF
TOOLS AND APPARATUS USED, AND
EXPLAINING THE MANNER OF
ENGRAVING VARIOUS
CLASSES OF
WORK.

ALSO, A HISTORY OF THE ART, FROM ITS ORIGIN
TO THE PRESENT TIME.

✓
BY WILLIAM A. EMERSON.

—
ILLUSTRATED.
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CONTENTS.

	PAGE.
List of Engravings, - - - - -	5
Introduction, - - - - -	7
Wood Engraving—Its Origin and History, -	9
“ “ The Process Defined, -	15
Kind of Wood Used and How to Prepare It, -	16
Tools and Appliances Used, - - - - -	18
Drawing on the Block, - - - - -	24
How to Prepare the Wood for the Drawing, -	25
The Drawing, - - - - -	25
Transfers, - - - - -	28
Engraving, - - - - -	29
Lesson I.—Diagrams and Proof-Taking, - -	31
“ II.—Figure Outlines, - - - - -	32
“ III.—Tints, - - - - -	34
“ IV.—Plugging, - - - - -	38
“ V.—Effective Designs, - - - - -	39
“ VI.—Flowers, - - - - -	40
“ VII.—Portrait Engraving, - - - - -	41
“ VIII.—Foliage, - - - - -	45
“ IX.—Rocks and Water, - - - - -	46
“ X.—Color Engraving, - - - - -	47
Electrotyping, - - - - -	51
Conclusion, - - - - -	52

ILLUSTRATIONS.

PAGE.

Frontispiece.	-	-	-	-	-	-	
Knave of Bells,	-	-	-	-	-	-	10
St. Christopher,	-	-	-	-	-	-	12
Armed Knight,	-	-	-	-	-	-	13
Wood Block, with Drawing,			-	-	-	-	16
“ “ Engraved,		-	-	-	-	-	16
Boxwood Log in Sections,	-	-	-	-	-	-	16
Bolted Blocks Screwed Up,	-	-	-	-	-	-	17
“ “ Separated,	-	-	-	-	-	-	17
Dowelled Block,	-	-	-	-	-	-	17
Amalgamated Blocks,	-	-	-	-	-	-	17
Gravers,	-	-	-	-	-	-	18
Tint Tools,	-	-	-	-	-	-	19
Scoopers,	-	-	-	-	-	-	19
Chisels,	-	-	-	-	-	-	19
Graver Ready for Use,		-	-	-	-	-	20
Engraved Executed with one Tool,		-	-	-	-	-	20
Engraving Pad,	-	-	-	-	-	-	21
Shade for the Eyes,	-	-	-	-	-	-	21
Eye-glass and Stand,	-	-	-	-	-	-	22
Angle at which Tools should be Ground,						-	22
Ink Dabber,	-	-	-	-	-	-	23
Oil Can, Oil Stone and Brush,		-	-	-	-	-	23
Burnisher,	-	-	-	-	-	-	23
Chip Brush,	-	-	-	-	-	-	23
Saw for Cutting off Plugs,		-	-	-	-	-	24
Pumice Stone,	-	-	-	-	-	-	24
Chinese White,	-	-	-	-	-	-	24

Tracing Point,	-	-	-	-	-	26
Pencil Dividers,	-	-	-	-	-	26
Indian Ink,	-	-	-	-	-	27
T Square,	-	-	-	-	-	27
Transfer Material,	-	-	-	-	-	28
Engraver at Work,	-	-	-	-	-	29
How to Hold the Blocks,		-	-	-	-	30
“ “ “		-	-	-	-	30
Diagrams,	-	-	-	-	-	31
“	-	-	-	-	-	31
Figure Outlined,	-	-	-	-	-	32
“ Finished,	-	-	-	-	-	32
Group of Outline Figures,		-	-	-	-	33
Light Tint,	-	-	-	-	-	35
Dark “	-	-	-	-	-	36
Graduated Tint,	-	-	-	-	-	36
Cloud Tint,	-	-	-	-	-	37
Section of Block, Showing Plug,		-	-	-	-	38
Method of Lowering Plug,		-	-	-	-	39
Design in White,	-	-	-	-	-	40
“ Black,	-	-	-	-	-	40
Boquet of Flowers,	-	-	-	-	-	41
Portrait,	-	-	-	-	-	42
“	-	-	-	-	-	44
Wood Scene,	-	-	-	-	-	45
Rocks and Water,	-	-	-	-	-	46
Monogram in Colors,	-	-	-	-	-	49
“ Color Blocks,	-	-	-	-	-	49
End Cut,	-	-	-	-	-	52

INTRODUCTION.

This manual is designed as a Hand-book^{*} of Wood Engraving; arranged in a simple and comprehensive manner.

The author has often been requested to give private instructions in the Art. Some wishing to employ it as a means of gaining a livelihood, others, as an accomplishment; and the object in sending out this manual, is to supply what he believes to be an increasing demand for information on this subject.

It is a fact well known to Wood Engravers, that educated and otherwise well informed persons, confuse Wood-cuts with Steel and Copper-plate Engravings, and Lithographs; and few understand the method by which they are produced. A knowledge of the first principles as here given, are, however, sufficient to prevent such a mistake.

It is designed to benefit young persons who have not decided what trade or profession to adopt, and whose tastes are artistic. To such, it gives valuable information, and will enable them to act understandingly, when called upon to choose their future calling.

To women of ability and artistic tastes, the Art is especially adapted. It opens to them a new avenue of employment, and there is no reason why women should not enter upon this field of labor, in which a few of their number have already achieved distinction. Many of this class have long desired to do so, and to such it points out the way.

To business men it is valuable, as nearly all kinds of business at the present day demands the services of the Engraver, and the knowledge gained by the perusal of this work, gives one a good degree of familiarity with the subject.

First let it be understood by the learner, that no one can acquire the Art in a few months time. It requires perseverance and practice; careful study of works of art, and a close observation of natural objects.

Like every other department of art, it has its difficulties and discouragements, but if followed with a true love for the Art, it will exalt the learner and his works may sometime exert a lasting influence upon the world.

In devoting ones time to Engraving the first consideration should be, the necessity for recreation. Being a sedentary occupation and requiring closer application than most other pursuits, less time should be devoted to it.

Men in good health can engrave nine hours each day without being over-taxed. A woman ought not to engrave over seven hours, and both should devote as much of the remaining time as possible, to exercise and recreation. A portion of this time spent in the examination and comparison of works of art, makes a pleasant diversion from work and is a constant help.

Many books have been published relating to Wood Engraving, but few of them have been of practical benefit to those wishing to learn the Art without an instructor. With the belief that this will supply the long-felt want it is presented to the public.

WOOD ENGRAVING.

ORIGIN AND HISTORY.

The Art of Wood Engraving is of great antiquity, and was practiced at an early period, although in a crude state. It is supposed to have originated with the Chinese, who made impressions on paper, from wood blocks as early as 1120, B. C.

Wood stamps, with engraved hieroglyphic characters were also used by the early Egyptians, for making impressions on bricks and other articles made of clay. This fact was established beyond doubt by the discovery of stamps of this character, in the tombs at Thebes, Meroe, and other places.

Several bricks are on exhibition in the British museum, which were found on the sight of ancient Babylon, bearing impressions of characters or marks made, while in a soft state, by the use of stamps. Various domestic utensils and ornamental articles, made of clay and of Roman workmanship, have also been found impressed with characters supposed to indicate the potter's name or that of the owner.

Von Murr, in his *Journal* on the Art of Wood Engraving, in speaking of the Romans, says: "Letters cut on wood, they certainly had, and very likely grotesques and figures also; the hint of which, their artists might readily obtain from the colored stuffs which were frequently presented, by Indian ambassadors, to the emperors."

Fig. 1.

*Knave of Bells.*

Impressions, from wood and metal stamps, of monograms, signatures, etc., for signing documents, impressed in a manner similar to that in which letters are post-marked at the present day, are in existence. Among the first of these, are the monograms used for this purpose by POPE ADRIAN, I, and CHARLEMAGNE.

The principle upon which the Art of Wood Engraving is founded, that of taking impressions on paper with ink from engraved blocks, was known and practiced in attesting documents, in the thirteenth and fourteenth centuries; and about the beginning of the fifteenth century the principle was adopted by German card makers, for printing outline figures on their cards. Fig. 1 is a *fac simile* specimen.

It was next applied to religious subjects. The monks availed themselves of the same principle to represent the figures of saints. One of the earliest of these is in the collection of Earl Spencer, and was discovered in one of the most ancient convents of Germany, pasted within the cover of a latin manuscript. It represents St. Christopher carrying the infant Saviour across the sea, and is dated 1423. Fig. 2 is a reduced *fac simile* copy of this curious engraving. An engraved inscription accompanying it, is thus translated:

"In whichever day thou seest the likeness of St. Christopher,
In that same day thou wilt, at least from death, no evil blow
incur :—1423."

Thus we see the earliest wood-cuts are awarded to Germany; most of them being on religious subjects, and engraved before the discovery of printing by Gutenberg. They were executed in a rough style and, many of them colored.

The next step was the application of the Art to what was known as block-books; consisting principally of devotional subjects, with short engraved inscriptions on the same block. Of these "The Apocalypsis," "The Historia Virginis," and "The Bible Pauperum," are the

most celebrated. An elaborate account of these is given in "The History and Practice of Wood Engraving," a valuable standard work, by John Jackson.

Fig. 2.



St. Christopher.

These engravings, although coarse, show an advancement in the Art, and about that time, whole books of text were engraved on wood. But the Art was to undergo a change. The invention of movable metal type, wedged together in an iron frame, was to supersede the engraved type blocks; and the impression, instead of

being taken by the tedious process of burnishing, was to be more speedily accomplished by the operation of the printing press.

Fig. 3.



Armed Knight.

For a few years after the introduction of typography, the Art suffered a temporary decline, only to revive again. Under the stimulating influence of the press, engravings multiplied, until, from being confined to a few towns, they were introduced throughout Europe.

The publication of illustrated books then became

general in Germany and Italy, reaching England in 1476.

Fig. 3 is interesting, as it represents one of the first of the English engravings, from a second edition of "The Game and Playe of the Chesse," published that year by Caxton. The engravings were quite rude compared with the earlier German works.

About the beginning of the sixteenth century, a complete revolution in Wood Engraving was accomplished by the genius of Albert Durer. His productions exhibit correct drawing, a knowledge of composition, light and shade, and attention to the rules of perspective; which elevate them to the rank of finished pictures.

It is thought by the best authorities that there is little probability of Durer having engraved his own designs, for in most of the wood-cuts supposed to have been engraved by him, we find cross-hatching freely introduced; easily produced by the artist in the drawing, but attended with considerable labor to the engraver. Had he engraved his drawings, he would, no doubt, have used means to produce effect, which would have been easier of execution. His illustrations were equaled by none of his contemporary artists.

During the first half of the sixteenth century, the publication of books illustrated by wood engravings increased, and prevailed to a greater extent than at any other time, with the exception of the present day.

From the beginning of the seventeenth century, the decline of Wood Engraving may be dated. Germany, the cradle of the Art, being the first to forsake it. From this time, the Art suffered great neglect.

In 1765, John Michael Papillon, an enthusiastic professor of the Art in France, made an unsuccessful attempt to restore it to its former importance; but it was not until 1790, that the genius of Thomas Bewick gave it the impetus which made it what it now is. Since that

time the Art has flourished without interruption, and at the present time, it seems to be at the zenith of success, for never before has there been such a demand for elaborate and costly wood engravings; they are to be found everywhere; in publications of the most expensive kind, in magazines, papers and books. The comparative cheapness and superiority of this class of engravings for books, has led largely to their use, to the exclusion of steel and copperplates.

THE PROCESS DEFINED.

Before explaining the process of Wood Engraving, let us first consider what this term implies and in what respect it differs from other kinds of engraving.

Engraving on Wood is the process of cutting away all the parts that have not been drawn upon. (See Figs. 1 and 2.) It does not include ornamental carving on wood, but only such as is used in printing. The lines which in Wood Engraving are left standing, in Copperplate and Steel are cut in the plate; the process being exactly the reverse, and as a natural consequence, the printing is done in a different manner. The plate being warmed and the ink rubbed into the engraved lines or grooves, then the surface wiped and polished, card or paper laid on and pressed into the inked lines by means of a copperplate press. In printing a wood-cut the surface is inked the same as ordinary type, by the use of a roller, and printed on a common type press; usually with reading matter set up in the same form, the wood being type-high.

Fig. 4.

*The Drawing.*

Fig. 5.

*The Engraving.*

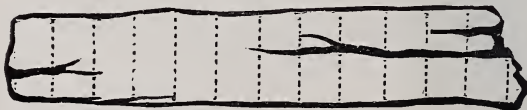
KIND OF WOOD FOR ENGRAVING, AND HOW TO PREPARE IT.

Several kinds of wood are used. Boxwood for all fine engravings; American rock-maple, mahogany and pine for coarse work.

Most of the boxwood used, is imported from Turkey, for this purpose. It has the closest grain of any wood now known; is light colored and will hold a fine clear line.

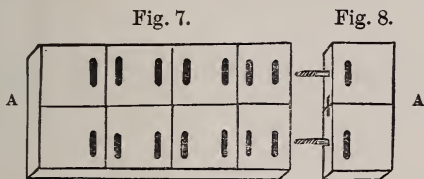
The engraving is made on the end of the grain. To prepare the wood for use, it is sawed from the log in pieces an inch in thickness, as indicated in Fig. 6. The pieces are then made exactly type-high, by the use of planes and scrapers, producing a smooth level surface.

Fig. 6.

*Boxwood Log in Sections.*

In most of our large cities there are dealers who prepare and furnish wood any size.

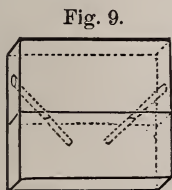
Large blocks which require much piecing are usually bolted and jointed together. These can be made of any required size, with the additional advantage that different parts of the drawing may be simultaneously engraved by different engravers and afterwards bolted together. In this way illustrated papers are enabled to produce in a day's time, a picture on which a single engraver might work for weeks.



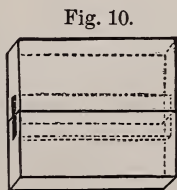
Back View of Bolted Block.

Fig. 7 shows the back view of a bolted block, screwed up by means of bolts and nuts. The front surface is, of course, smooth and even and prepared to receive the drawing.

Fig. 8 shows the mode of separating the parts which are connected by bolts. At the lines A A, the parts are permanently joined with glue, being either dowelled or amalgamated, as shown in Figs. 9 and 10, and are not intended to be separated.



Dowelled.



Amalgamated.

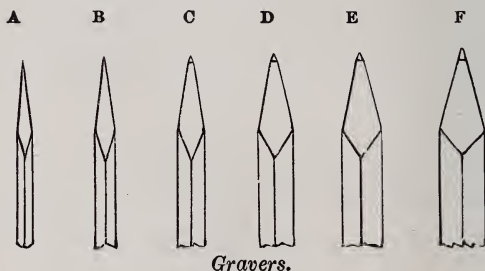
Care should be taken in selecting wood to have it free from red streaks and black or white spots. The two first mentioned are no indication of poor wood and seldom trouble the engraver, but they are unpleasant to the draughtsman, by reason of the color. The white spots indicate rotten wood, which crumbles away and cannot be engraved upon. In selecting wood, choose a pale yellow or straw color, free from blemishes.

TOOLS AND APPLIANCES USED.

A complete set of tools comprises six gravers, twelve tint tools, three scoopers and two chisels.

The gravers or lozenge shaped tools, are evenly graduated from fine to coarse, as represented in Fig. 11. These being nearly square in shape, enables the engraver to vary the width of the lines from a very fine one to one quite coarse.

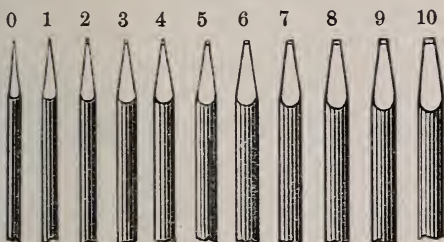
Fig. 11.



The tint tools are used in cutting tints, such as skies and flat surfaces. (Fig. 12.) The finest tool from which

the rest are graduated, being so thin that the line it makes is scarcely visible in printing.

Fig. 12.

*Tint Tools.*

Scoopers or digging-away tools are three in number and are rounded on the bottom; (see Fig. 13.) No. 12 being a size larger than the largest tint tool used. They are employed in clearing away all the wood not drawn upon. Notwithstanding the work to be done with these tools is coarse and rough, yet a good degree of skill is required to use them properly, as the dead wood must be removed from the lines without bruising them; thus securing clear sharp line in printing.

Fig. 13.

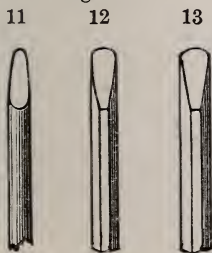
*Scoopers.*

Fig. 14.

*Chisels.*

The two chisels (Fig. 14.) are used in cutting away and leveling the surface, when necessary.

Handles may be made of cork or wood: usually of cork, because of its lightness and the readiness with which it fits the hand.

Fig. 15.



Graver Ready for Use.

The graver handles should be marked, for convenience, A, B, C, D, E, F. The tint-tools and scoopers, 1, 2, 3, etc.; and the chisels, I, II.

Fig. 16.



Engraving Executed with one Tool.

For beginners only a small number of tools are necessary, as additions can be made as fast as needed. The following selection is sufficient to commence with: three gravers, A, D, and F; five tint-tools, 1, 2, 4, 6, and 8; two scoopers; and one chisel.

A great variety of work may be done with a small number of tools. As an illustration, Fig. 16, was engraved entirely with one medium sized graver.

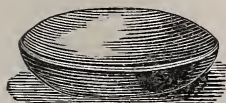
In addition to the tools, the following articles are necessary:

1. Engraving pad.
2. Shade for the eyes.
3. Engraving glass and standard.
4. Oil stone.
5. Ink daber.
6. Box of wood-cut ink.
7. Burnisher.
8. Small saw.
9. Chip brush.
10. India paper for taking proofs.

The engraving pad should be made of good smooth leather, and filled with fine sand. If well filled, the block can be turned easily upon it, and the longer it is used, the more readily it will adapt itself to the block. (Fig. 17.)

A green shade should be worn to protect the eyes from too strong a glare of light from overhead. (Fig. 18.)

Fig. 17.



Engraving Pad.

Fig. 18.

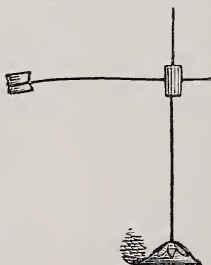


Shade for the Eyes.

Most engravers use a magnifying glass of moderate power; more for relieving the eyes from the strain of keeping them fixed on a small object, than for magnifying the work. It should be from an inch and a quarter to two inches in diameter.

A standard, for holding the glass, is made as shown in Fig. 19; the base being of iron or lead, so that it may not be easily overturned.

Fig. 19.

*Eye-glass and Stand.*

An Arkansas oil stone is sufficient for keeping the tools sharp, after being ground on a common grindstone. To sharpen them properly, a few drops of oil should be put on the oil stone and the tool rubbed back and forth, great care being taken to hold it steadily, thus securing an even cutting edge.

Fig. 20.

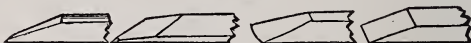
*Angle at which Tools should be Ground.*

Fig. 21.

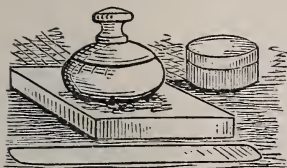
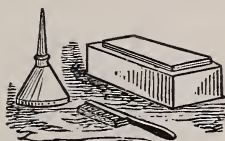
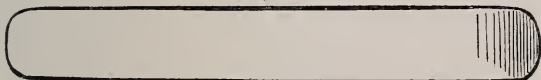
*Ink Dabber.*

Fig. 22.

*Oil Stone.*

The ink dabber is a pad made of fine calf skin, properly filled, and the leather so firmly drawn that no wrinkles will form on its surface while being used.

Fig. 23.

*Burnisher*

For an ink slab take a smooth stone slab, or plate of thick glass, or a piece of engraver's wood, or anything having a smooth surface upon which to distribute the ink.

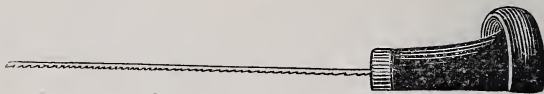
Fig. 24.

*Chip Brush.*

For proof-taking, the best wood-cut ink should be used; keeping it in a small box having a close fitting cover, to protect it from the dust. India paper and a burnisher for taking the impressions of engravings; a

soft brush for clearing away small chips; and a fine saw for cutting off plugs, complete the list of necessary articles for engraving.

Fig. 25.

*Saw for Cutting off Plugs.*

DRAWING ON THE BLOCK.

In making a drawing on the block, the following articles are necessary:

1. Piece of pumice stone.
2. Cake of beeswax.
3. Cake of Chinese or Flake White.
4. Small camel hair brush.
5. Transparent tracing paper.
6. Case of pencils.
7. Tracing point.
8. T Square.
9. Ruler.
10. Pencil dividers.
11. Cake of Indian ink.

Fig. 26.

*Pumice Stone.*

Fig. 27.

*Chinese White.*

HOW TO PREPARE THE WOOD FOR THE DRAWING.

Although drawing on the wood and wood engraving are not commonly done by the same person, yet it is very important for the beginner to be able to make his own drawings. It is true, he may secure a better result by employing a draughtsman, but he should make it a part of the instruction in engraving; for, with a knowledge of drawing, acquired by its practice in connection with engraving, he will better understand the drawings of others, and will more readily give the spirit of the artist's meaning.

Wood, as prepared for the engraver, has a polished surface, too smooth for drawing upon with a pencil; to give it the required surface, moisten the face of the block and rub it with the flat surface of a piece of pumice stone, being sure first that it is even and free from grit. When the gloss has thus been removed, and the little scratches on the surface taken out, brush off with the hand whatever adheres to it, and with a camel hair brush, moisten the surface with Chinese or flake white mixed with water, and rub in briskly with the fingers, trying to secure an even coating. When it is dry it forms an excellent tooth for the pencil. Care should be taken to use as little water upon the block as possible, as it may cause it to warp.

THE DRAWING.

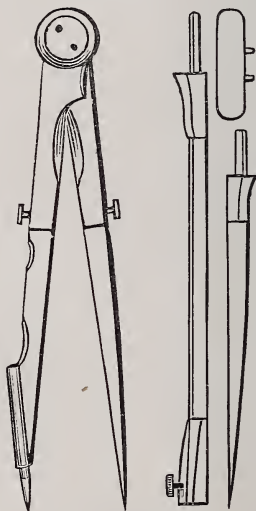
A sketch or design, is first made on paper, unless you have a photograph or a picture the exact size you

wish. Place the tracing paper over the copy, fastening it securely at the corners to keep it in place, and with a soft pencil, kept sharp at the point, trace a clear outline. Fasten the tracing paper to the block, face downwards, by means of beeswax rubbed on the sides. With a tracing point, retrace the lines, so that they will be visible on the block. Remove the paper and with a *HHHHHH* pencil, strengthen the outline, correcting and improving the picture as you proceed. The drawing may then be shaded in with a soft pencil or Indian ink, according to the taste and skill of the learner.

Fig. 28.

*Tracing Point.*

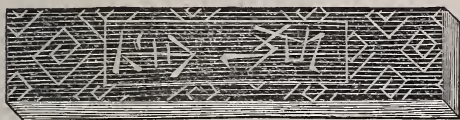
Fig. 29.

*Pencil Dividers.*

Accuracy of outline must be observed in drawing,

for every defect in the outline is more apparent when the engraving is printed.

Fig. 30.

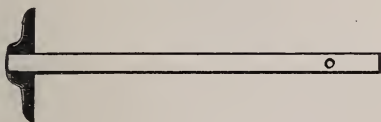


Cake of Indian Ink.

In drawings where curved lines or circles are introduced, a pair of pencil dividers are necessary for drawing even lines; they will be found useful, not only in describing circles, but for taking measurements and a variety of other uses.

A small T square is also needed, for drawing parallel or perpendicular lines with accuracy.

Fig. 31.



T Square.

It is usual to cover the drawing with tissue paper while the engraving is in progress, to prevent it from being soiled or the sharpness of the lines destroyed; to do this, cut a piece of paper a little larger than the block, rub the edges of the block with beeswax, cover it with the paper, drawing it tightly over and burnishing it on the waxed edges. The covering is then cut open at the

point where the engraver is to commence, and the opening enlarged as fast as required.

TRANSFERS.

Fig. 32.

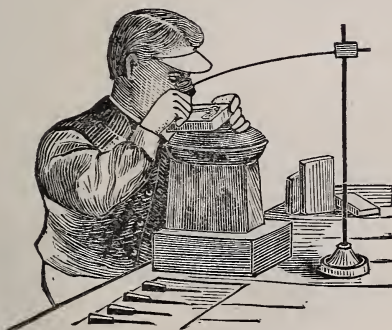


In making an exact copy of a wood-cut, steel or lithographic print, the labor of drawing is saved by transferring it to the block, in the following manner: the block is prepared by the use of the pumice stone and water, without being whitened. The print from which the transfer is to be made, is placed in an earthen plate and a preparation, made by dissolving caustic potash in alcohol, is poured over it and allowed to remain about a minute, until the ink is softened; rinse the liquid off by dipping it in clear water; absorb the water by touching the lower edge of the print to a piece of blotting paper; lay the print on the block and subject it to the pressure

of a printing press, which will if properly done reproduce the picture.

ENGRAVING.

Fig. 33.



Engraver at Work.

The drawing being prepared on the block, the next thing to be observed, is the mode of sitting at the table and holding the work. The block should rest upon the pad, at such an elevation as to allow the learner to sit erect while at work. Hold the block, not too tightly, with the thumb and forefinger of the left hand, so it may be easily moved around or turned on the pad. With the right hand the graver is held, with the handle resting in the palm. The graver is then pushed forward with the thumb and forefinger, guided by the thumb resting on the surface of the block, as in Fig. 34, or against the side as in Fig. 35.

Fig. 34.

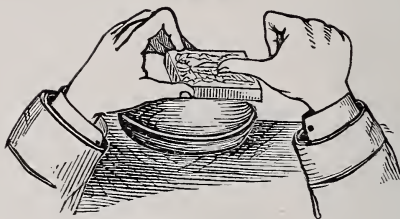
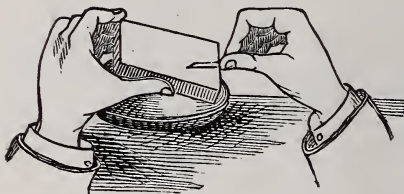


Fig. 35.



LESSONS IN WOOD ENGRAVING.

LESSON I.

DIAGRAMS AND PROOF-TAKING.

For the first lesson in engraving, a few diagrams are given, which will enable the learner to get the use of the tools, somewhat, before attempting more complicated outline cuts.

Fig. 36.

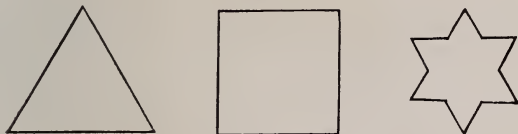


Fig. 37.



The lines should be carefully outlined with a fine tint tool. After the outline is finished on the inside, take a wider tool and carefully cut the wood away from the lines; then outline the outside, leaving an even

width of line, and cut away as before. When finished, a proof may be taken and the lines trimmed up where irregular.

To take a proof, first, put a small quantity of ink on the dabber and beat it upon the slab until it is evenly distributed; when the engraving is sufficiently inked, a piece of India paper, a little larger than the face of the block, is laid upon the engraving, a thin card laid upon that, and then burnished over with a paper-folder until a good impression of the cut is taken. The engraver's prints should be superior to those taken by a pressman. Light and delicate portions of an engraving should be rubbed very gently and the darker parts brought out by a heavier pressure.

The beginner will find it pleasant to keep proofs of his work, and, by comparison, observe the progress made.

LESSON II.

FIGURE OUTLINES.

Fig. 39.



Figure Outlined.

Fig. 40.



Figure Finished.

After engraving the diagrams each in their order, a careful drawing may be made of the outline subject, Fig. 40.

In the engraving, commence at the top of the drawing and outline the under part of each line, being careful to leave as much surface as the pencil lines cover. After outlining, clear away the wood, being careful not to bruise the lines with the under part of the tool. To guard against this, a thick card may be placed under the tool.

Fig. 41.



The next subject, Fig. 41, introduces more variety, and the learner is now prepared to bring into use the experience gained in the previous lessons. In the different figures of this group the lines vary to represent the texture and form of each. The same directions should be followed as in the previous cuts, observing the difference in the strength of line and the variety of outline.

LESSON III.

ENGRAVING TINTS.

Having acquired some degree of freedom in the use of the tools, before commencing on shaded pictures, the attention should be given to cutting tints. The future success of the pupil depends very much on his skill in tint cutting; and although it may at first seem tedious, yet if persistently and patiently practiced, it will result in great benefit to him. This stage of engraving is so important that it should receive the most careful attention. A golden rule for the learner is to keep constantly on hand a block on which to engrave tints, and to give some portion of each day for practice on this particular style of work.

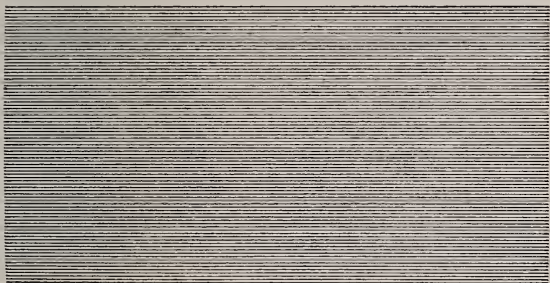
To engrave a flat tint, take a small piece of box-wood, wash the surface with Indian ink; and when dry, draw very light parallel lines about one fourth of an inch apart; select a medium sized tint tool; place the block on the pad as in Fig. 34; commence near the right hand upper corner, directly under the first pencil line; guide the tool with the thumb and forefinger and cut a line slowly and as straight as possible across the block, being careful to cut an even depth of line. In cutting the

second line, place the tool the width of the line to be engraved below and push it forward slowly in short strokes, until the line is finished, aiming to leave the line as wide throughout as at the beginning.

It is not probable that the learner will succeed in keeping the tool from going upward, thus making the line thinner, or downward, making it thicker; but by following the directions closely, he may succeed in making a fair line.

Cut every line carefully, without minding the time it takes; giving more attention to quality than quantity. If the lines commence running up or down, stop immediately and commence again under the next pencil line, improving by observing the faults of the previous attempt.

Fig. 42.



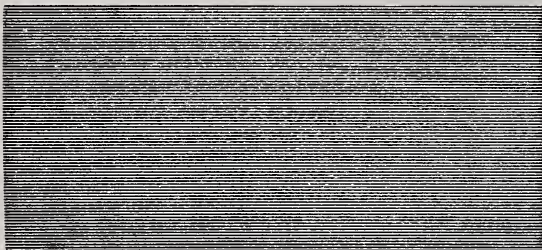
Light Tint.

When finished, take the dabber and with a small quantity of ink, distributed on the ink slab as explained, beat the block lightly as in taking proofs; this being done the quality of the work is shown. With a finer tool than before, go over the work; where the lines are too thick,

take a thin shaving off the upper or the lower side of the line, or both, in such a way as to leave it straight and even, being careful not to make the lines too thin by removing too much; where the lines are too thin they cannot be remedied, and should be let alone.

By using different sized tint tools, a variety of tints may be cut; also, with the same tool, more surface of line may be left and thus a different tint produced. (Fig. 43.)

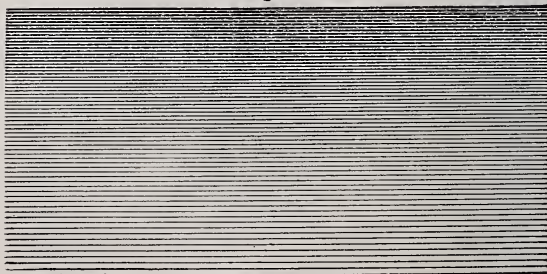
Fig. 43.



Dark Tint.

After sufficient practice in cutting flat tints, proceed with graduated tints, which are produced by varying both the width of line and the distance apart.

Fig. 44.



Graduated Tint.

Plain tints are used to represent sky and all flat surfaces; the graduated tints for cylinders and round surfaces; but tints vary according to the taste of the engraver and the subject to be engraved. Especially does this apply to skies and cloud work, an illustration of which is given. It is formed of lines carefully blended together, with fine gravers. To do this skilfully the gravers used must be kept sharp, which, with artistic feeling on the part of the pupil, will insure a good result, and the means by which it has been accomplished cannot be detected without the closest examination.

Fig. 45.



Cloud Tint.

To make a drawing of the sky tint, trace the darker portions of the cloud work and offset it lightly on the block, with the burnisher; then go over the whole surface with a very light coating of Indian ink. When dry, go over all the darker parts with a second coat, repeating the process if necessary until the light and shade in the drawing compares with the copy. Then, with a brush, wash in the high lights with Chinese white.

In the engraving, first remove the high lights with a small scooper, then cut the dark parts with a fine graver and vary the size of the tool according to the shading, the closest attention being paid to the copy.

LESSON IV.

PLUGGING.

At this stage of engraving, it is well to consider how to remedy mistakes, commonly called slips, which are liable to be made, especially before the learner acquires the use of the tools; but they should be guarded against until they very rarely occur.

Fig. 46.

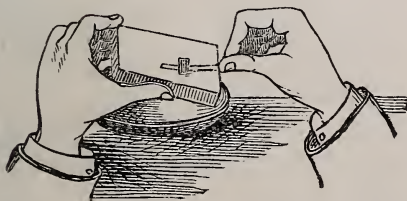


Section of Block, Showing Plug.

When it is necessary to plug a block, first consider how much of the surrounding surface must be taken out to make a close joint, which will not show when printed. A hole is then made in the block with a gimlet, in proportion to that of the alteration to be made. A round tapering plug is then formed, a trifle larger than the hole, so that when driven like a wedge it will fit closely all around and is ready to be levelled and smoothed. This is done by sawing off the plug with a small watch spring saw, having first placed a piece of writing paper

on the block to protect the work; this being done, the plug is shaved down even with the surface, by the use of a very sharp wide chisel, care being taken not to shave it lower than the surface, as it would then be necessary to replug the block.

Fig. 47.



Method of Lowering Plug.

LESSON V.

EFFECTIVE DESIGNS.

In wood engraving, effects of light and shade are easily produced. Examples are given on page 40, introduced at this time for variety and to give the learner a little more practice before going on to more complicated subjects. In an engraving of this kind, accuracy of outline is very necessary, especially in Fig. 49, in which every detail of outline adds to the effect.

Fig. 48.

*Design in White*

Fig. 49.

*Design in Black.*

LESSON VI.

FLOWERS.

Flowers and leaves are usually represented in delicate tints. On the next page, we have a good subject for practice; a well arranged boquet, made up of a variety of flowers and eaves.

Fig. 50.

*Boquet of Flowers.*

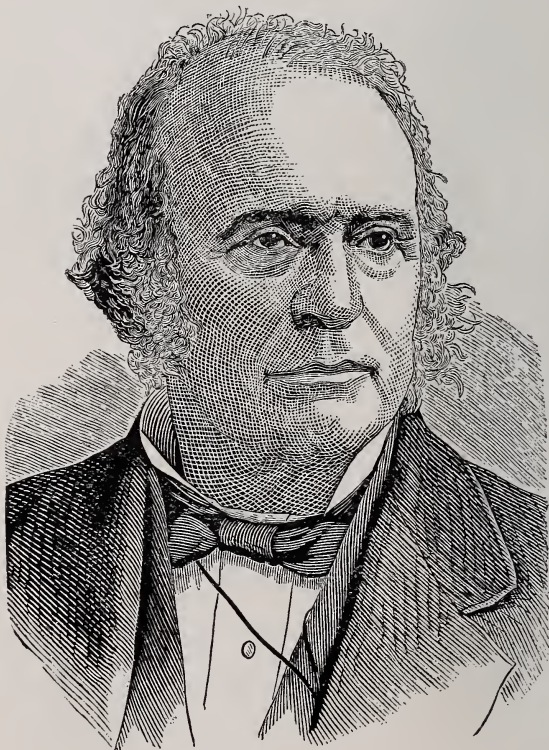
LESSON VII.

PORTRAIT ENGRAVING.

In portrait engraving, a large amount of practice is necessary to enable the beginner to preserve the expression of the face, by leaving a sufficient amount of color in all the principal features, such as the eyes, nose and the under part of the lips. While engraving, bear

in mind that cutting away and weakening the color in the features cannot be easily remedied, but if the parts are too dark they can be readily lightened. To be a successful portrait engraver, ones whole time and attention should be given to this branch of the Art.

Fig. 51.



Wood Engraving is capable of producing a more effective and artistic portrait than any of the finer and smoother processes.

In the two examples given, a variety of work is introduced. The flesh tint in Fig. 51 is a good illustration of white cross-lining, which is the opposite of black cross-lining or cross-hatching, and is produced by cutting ordinary lines, to conform to the surface of the face, which are afterwards cross-lined, the same rule being observed in making the lines conform to the surface of the face, which gives it increased roundness and finish. These rules apply to all flesh tints, whether hands, feet or faces. Fig. 52 shows the delicacy and roundness of the face and hands, the free and wavy character of the hair and the variety of drapery.

The methods employed in cutting portraits are so varied that it would be advisable to collect and study the different styles and select the best subjects for practice.

When the subject is to be copied from a photograph or cartes-de-visite, the services of the photographer should be called into use and the subject photographed on the block, thus giving all the features in the minutest detail.

By a careful study of engraved portraits, the learner should make himself familiar with the mode by which the form of the features are preserved. After this has been done, if prepared to carry out the instructions with judgment and with a definite object in view, he will, in a measure, be successful. But if there is any uncertainty about the proper way to treat a portrait, do not attempt it until, by further observation and study, the way is made clear.

Fig. 44.



LESSON VIII.

FOLIAGE.

Fig. 53.

*Wood Scene.*

In this example we have represented a native forest, clad in the luxurious foliage of early summer. The effect of coolness which is suggested in the shades, and the warmth of sunlight streaming through the tree branches, is produced by the judicious use of the graver,

while the same emotions and feelings should be experienced by the engraver as though in the presence of the reality. The means by which the feeling is expressed, will be seen by observing the style employed in the copy.

LESSON IX.

ROCKS AND WATER.

Fig. 54.



The plate illustrating this lesson shows the method of engraving rocks and water so clearly that very little instruction is necessary.

The rocks in the distance are more delicately cut than in the foreground, the same rule being observed

in the treatment of the sky and foliage, in contrast with the foreground, the lines of which have more strength and character.

LESSON X.

COLOR ENGRAVING.

The practice of printing wood-cuts in colors, from different blocks, originated towards the close of the sixteenth century. It was discovered by Albert Durer, who found the Art of Wood Engraving in its infancy, and by his remarkable genius, raised it to be a pattern for all times.

The invention was used at that time principally in ornamental designs, but has now attained a high degree of perfection, being used not only in common merchandise labels and ornamental designs, but in the finest book illustrations.

Before commencing a color engraving, it is desirable to make a complete design in colors, from which to copy the engraving. From this, draw and engrave the principal block, then take a proof and transfer to another block, from which cut away all except the portions necessary to print the next color; proceed in the same manner with the remaining colors, transfers being taken from the principal block for each color. As an illustration, the blocks used in the accompanying monogram are shown separately.



Fig. 55.



Fig. 56.



Fig. 57.

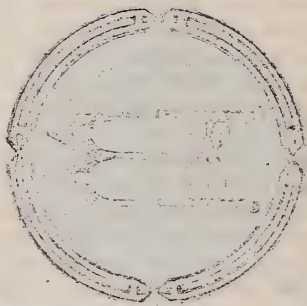


Fig. 58.



Fig. 59.





ELECTROTYPING.

The invention of Electrotyping, by which wood-cuts and type are reproduced, is comparatively recent; although experiments in electro-plating were made in Europe, from 1801 to 1845, with more or less success.

It is a chemical and mechanical operation combined, and is performed in the following manner: A mould is made of pure wax, upon which the wood-cut is impressed by means of a press of sufficient power to bring out even the finest lines; the mould is then covered with a fine coating of plumbago, which is evenly distributed by brushes, thus giving a conducting medium for the electric current, which is further strengthened by a wash of sulphate of copper. The result is a thin film, coating the entire surface and hastening the deposit of copper. The wires from an electro-magnetic battery, are attached to the mould, which is then suspended, from a metal rod, in a trough containing a solution of acidulated sulphate of copper. Copper plates are suspended in the solution facing, but not touching, the mould. The rods are connected with the battery by wires, and the circuit of electricity completed. The copper plate is rapidly decomposed and deposited on the face of the mould. In ten or twelve hours a copper shell is formed, which on being removed from the mould, receives a coating of chloride of zinc; melted type metal is then poured or dipped into the shell. After cooling, the face is laid on a perfectly level iron plate and the superfluous type metal planed off and the the plate squared and trimmed up and

screwed on blocks of wood, which bring them the height of type.

It is best to have a wood-cut electrotyped before printing from it, and preserve the engraving, from which electrotypes may, at any time, be taken.

CONCLUSION.

Having given, in a few lessons, directions as simple and practical as possible, it now remains for the learner to make the best use of the information given, and according to his own aptness and diligent application, will he be able to engrave well in a longer or shorter time. Perfection in engraving is never reached, and the best engravers see higher and better results to be attained. Then set your standard high; let no opportunity for acquiring information pass unimproved; learn something new from every attempt; be not easily satisfied with your own engraving, but strive to remedy its faults. With the hope that these suggestions may be of value and that the instruction herein contained, serve the purpose intended, we leave our readers to achieve the success which perseverance and a love of the Art will insure.



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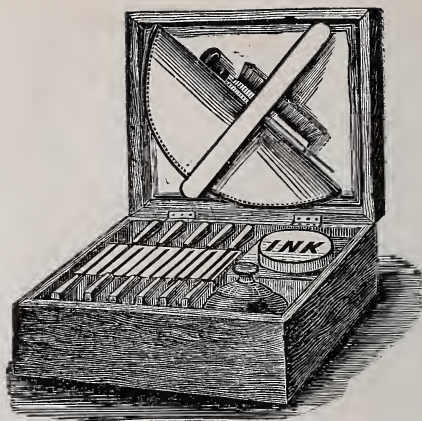
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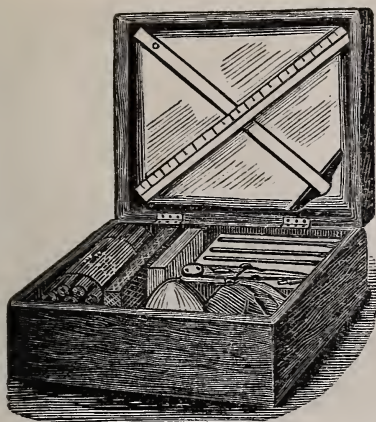
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CASE A

CONTAINS

(SEE FIG.)		(PRICE EACH.)	
12.	5 Tint Tools, in handles,	- -	.40
11.	3 Gravers,	" - -	.40
13.	2 Scoopers,	" - -	.40
14.	1 Chisel,	" - -	.40
25.	1 Small Saw,	" - -	.10
24.	1 Chip Brush,	- - -	.30
17.	1 Engraving Pad, (French Calf.)		.75
18.	1 Shade for the Eyes,	- - -	.40
21.	1 Ink Dabber,	- - -	.75
23.	1 Burnisher for Taking Proofs,	-	.40
	1 Box Wood-Cut Ink,	- -	.25
	1 Sheet of India Proof Paper,	-	.25
All Complete in a Handsome Black Walnut Case,			\$7.50
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CASE B.

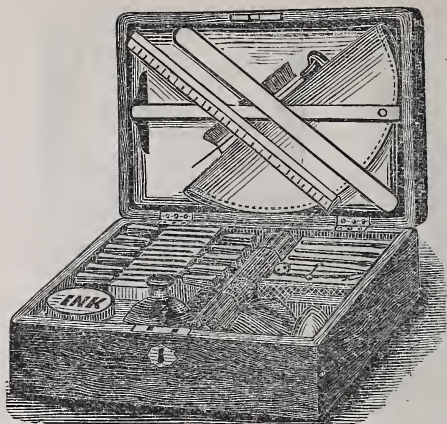
CONTAINS

(SEE FIG.)

(PRICE EACH.)

28.	1 Tracing Point,	-	-	-	-	.15
26.	1 Piece of Pumice Stone,	-	-	-	-	.15
27.	1 Half Cake Chinese White,	-	-	-	-	.15
30.	1 Stick Indian Ink,	-	-	-	-	.25
31.	1 T Square,	-	-	-	-	.50
29.	1 Pr. Nickel Plated Dividers with					
	Extension Bars,	-	-	-	-	1.50
	1 H H H H H H Pencil,	-	-	-	-	.15
	1 H H H H Pencil,	-	-	-	-	.15
	4 Tracing Pencils,	-	-	-	-	.10
	1 Sheet French Tracing Paper,	-	-	-	-	.25
	1 Cake of Wax,	-	-	-	-	.10
	3 Brushes,	-	-	-	-	.10
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22.	1 Arkansas Oil Stone, in Box,	- -	1 00
22.	1 Oil Cup,	- - - -	.25
	1 Two Inch Eye-glass,	- - -	1.00

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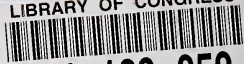
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